United States
Environmental Protection
Agency

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Seattle WA 98101

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EPA

August 20, 1992

In Reply
Refer To: HW-113

Robert L. Geddes
Senior Environmental Engineer
Monsanto Chemical Company
P.O. Box 816
Soda Springs, ID 83276

Subject: Phase II Remedial Investigation/Feasibility Study Work Plan for the Soda Springs Elemental Phosphorus Plant

Dear Mr. Geddes:

EPA's review of Monsanto's proposed Phase II Remedial Investigation/Feasibility Study Work Plan for the Monsanto Soda Springs Plant dated July 22, 1992, is substantially complete. EPA will complete its review and provide complete comments once the May, 1992 sampling results and the supporting documentation for the air modeling done in Phase I are provided and after we meet to discuss our questions and concerns. The purpose of this letter is to provide partial approval in order to ensure that installation and sampling of groundwater monitoring wells can be completed before the advent of bad weather.

EPA has carefully reviewed those parts of the Phase II Plan which relate to the field work and by this letter is conveying approval to proceed with Task 5, the Hydrogeological Investigation, contingent upon satisfactory response to the enclosed comments prior to well installation. In the interest of time, your response to the comments should take the form of a phone conference followed by written confirmation, particularly since some of the enclosed comments pertain generally to site hydrogeology but are not critical to the field work.

I appreciate your keeping me informed about your problems with getting the data from the May, 1992, sampling back from the laboratory. Please continue to make every effort to get the quality assured data to EPA as soon as possible. Since approval of Task 5 has been granted without benefit of that data, it is possible that additional tasks may have to be considered once that data is available.

As we have discussed, I look forward to meeting with you at 2:00 pm on September 2, 1992 here in Seattle to discuss our comments, questions and concerns regarding the entire Phase II Work Plan, as well as possible ideas to shorten the duration of

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the RI/FS while still fulfilling the requirements of the statement of work. If you have any questions or wish to discuss this letter, the attached comments, or the meeting please do not hesitate to call me at (206) 553-2100.

Sincerely,

Timothy H. Brincefield
Superfund Project Manager

Enclosure

cc: Charles Ordine, EPA ORC
Christine Psyk, EPA Superfund
Lorraine Edmond, EPA ESD
Don Matheny, EPA ESD
Gordon Brown, IDHW
Mike Thomas, IDHW
Jim Eldridge, SAIC
David Banton, Golder Associates

Enclosure

Preliminary Hydrogeological Comments
Phase II RI/FS Work Plan
Monsanto Elemental Phosphorus Plant
Soda Springs, Idaho

1. Page 22, Section 2.2.5.5. The statement that several constituents in ground water are only of potential interest because of welfare or aesthetic reasons is erroneous and misleading. These constituents will be evaluated in the risk assessment.

2. Page 23, Section 2.2.5.2. Based on EPA's risk screening process the constituents of concern in the shallow ground water should include aluminum, beryllium, chromium, fluoride, iron, manganese, molybdenum, selenium, sulfate, vanadium and radon-222. Likewise, constituents of interest in the Chesterfield Range Aquifer should include aluminum, arsenic, chromium VI, iron, manganese, molybdenum, sulfate ion, and radon-222.

3. Page 25, Section 2.2.5.4. The Work Plan's discussion on the temporal changes of constituent concentrations in UBZ-2 cannot be entirely supported with data presented in the PSCSR. EPA has not yet had the opportunity to evaluate the data collected during the May 1992, sampling event. Due to the four year gap in data collection, it is not possible to claim with much certainty that concentrations of all constituents except fluoride are decreasing with time in UBZ-2. Plotting of the May 1992, analytical data is needed to confirm the assertion that concentrations are currently decreasing.

   Similarly, the statement about cadmium decreasing with time in UBZ-1 is not supported by the temporal plot shown in the PSCSR. Cadmium appears to remain about the same in well TW-10 and in several of the UBZ-1 springs.

4. Page 26, Section 2.2.6. Since elevated plant tissue concentrations of metals and fluorides were found predominantly within 2.5 miles of the Monsanto Plant (Serverson and Gough 1979), a rationale should be provided as to why Phase II soil sampling does not extend this far.

5. Page 26, Section 2.3. The constituent exposure routes presented in this section is oversimplified with respect to sources, pathways, and receptors. This section should have provided a revised conceptual site model based on Phase I results. This would help focus the reader on those constituent sources and migration pathways that require further study in Phase II. The risk assessment will examine these this issue in detail.

6. Page 31, Section 3.2.4. Monsanto proposes no additional direct geological investigation during Phase II. In the southernmost cross-section in the PSCSR Monsanto correlates a sand and gravel bed in TW-11 with a clay bed in TW-21, 9 and 35. Golder Associates interpreted the sand and gravel layer (in TW-11) as a possible former stream channel in the 1985 hydrogeological report. Why is this correlation being made? Is it suggested that the clays are overbank deposits in making this correlation. Careful correlation of units needs to be made at the south end of the plant and off site in order to estimate the extent, and throw, of the main fault.

7. Page 41, Section 4.5.1. Additional discussion should be provided on how the results of the electromagnetic (EM) survey will be used to determine placement of the new monitoring wells. In addition, what changes in well placement will occur if the inferred subsidiary fault is not found south of the facility? The PSCSR (page 50) indicates that this fault is believed to die out in this area. According to the schedule, there is only one week between the time of the survey and the beginning of well drilling. EPA must review the EM survey results prior to well installation.

   It is unclear why Monsanto proposed the two different target horizons. UBZ 4 is listed as the target horizon on the west side of the fault and UBZ 3 on the east side. Is this change due to the perceived offset along the fault? If so, Monsanto should check their correlations on the cross-section along the southern plant boundary as discussed in Comment #18. Furthermore, the wells with the highest contaminants downgradient of the SX pond, KM-8 and KM-9, one east of and one west of the Finch Springs fault, are screened in UBZ-4.

8. Page 43, Section 4.5.2. The preceding text indicates that five, not six, new monitoring wells will be installed during the Phase II investigation. Please clarify.

   The PSCSR (Section 3.6.2.1) indicates that the UBZ contains two or three highly permeable interbed horizons separated by basalt flows. From cross section A-A' (near where most of the new wells will be installed) of that report it appears that the UBZ would consist of at least Basalt Flows V and IV. The Work Plan states that boreholes for the new wells are to be drilled five to ten feet into the unweathered basalt (Basalt Flow III?) underlying the UBZ aquifer. If the intention is being interpreted correctly, it is recommended that conductor casings be installed into the uppermost unweathered basalt layer. This telescoping drilling method would help minimize the potential for introducing contaminants into lower interflow zones within the UBZ. The Work Plan would also benefit by presenting a

better description of where exactly the screens of the new wells will be placed. Perhaps a simplified cross section indicating approximate screen depths of proposed wells could be provided.

9. Page 44, Section 4.5.3 and Table 4-5. Radon-222 should be added to the sampling list. This constituent exceeded the proposed drinking water standard in certain wells in each aquifer. Since there is not enough evidence to ascertain if the radon is naturally occurring at the levels indicated by the October 1991 sampling results, Monsanto should evaluate this issue in Phase II.

10. Page 46, Section 4.5.5. A laboratory QA plan for the flouride analysis of groundwater samples by Monsanto discussed on this page should be provided to EPA.

11. Page 46, Section 4.5.5 and SOP TP-1.4-12. Ideally, Monsanto's production wells would be shut down for the duration of the aquifer pump test or pumped at a constant rate since it may be difficult to correct drawdown and recovery data for the effects of the production wells starting and stopping. However, it is realized that it will be impractical to shut down the facility's production wells for several days. The impact of production wells on UBZ-2 observation wells would obviously be diminished if the main fault is truly acting as a barrier to ground water flow. However, this phenomenon has not been entirely substantiated with the existing site investigations. In addition, the fault is believed to be hinged and it is quite possible that hydraulic properties of the fault zone could change laterally along the fault. Determining the hydraulic effect of the fault is a primary objective of performing the pumping tests. The Work Plan should address specifically how the impact of operating production wells will be taken into account.

12. QA Plan Figure 2-1. This figure indicates that an alternate laboratory has been selected to potentially provide analytical support for this study. A laboratory QA plan from this facility should be provided to EPA.